

1-P
Details of illustrations in
this document may be better
studied on microfiche

"Made available under NASA sponsorship
in the interest of early and wide dis-
semination of Earth Resources Survey
Program information and without liability
for any use made thereof."

E7.3 10434
CR-13/224

CATHOLIC UNIVERSITY OF AMERICA

Research Institute for Social and Behavioral Sciences

ERTS Image Analysis: Preliminary Report ID # 1080-10163, Orbit 1111
Date of aquisition: 11 Oct 1972
Site:
north of Segou. Republic of
Mali, West Africa

Discipline: Social Anthropology

Using an ethnography (Paques: 1954) as a data source in conjunc-
tion with image analysis makes possible the provisional identification
of: (I) the populations or ethnic groups inhabiting the area, (II) the
approximate limits of their occupancies, and (III) specialized cultural
use of physiographic features. Verification and updating of ethno-
graphic maps can be accomplished.

I. Populations or ethnic groups are: Bambara (dominantly horticultural),
Peul or Fulani (cattle-keeping nomadic peoples), Maure or Moor (camel-
keeping nomadic peoples), Bozo (riverain fishing group) and a possibly
heterogeneous or mixed population in the area (trending north and
south) of irrigated paddy rice north of the river Niger.

The Bambara cultivate in four different parts of their environment
a, Fields bordering river channels. Crops are rice [Oryza sativa
and Oryza glaberrima], cotton, fruit trees and onions. An area
trending southwest to northeast, adjacent to the main channel of river,
with a somewhat rounded patterning of fields (at 1:140,000 scale)
is clearly visible in the imagery. South of the river in the same
vicinity is another block with a different internal patterning, also
suggestive of cultivations.

b, Extensive shifting or "bush" cultivations. Principle crops are
Sorghum vulgare [sorghum], Pennisetum typhoideum [bulrush millet],
Vigna unguiculali [cowpea], Hibiscus esculentus [okra], Digitaria
exilis [Hungry rice], Zea mays [maize], Voandzeia subterranea [Bambara

N73-20394

Unclas
G3/13 00434

(E73-10434) [ANALYSIS OF ERTS IMAGERY
OF AREA NORTH OF SEGOU, REPUBLIC OF
MALI] Preliminary Report (Catholic Univ.
of America) 4 p HC \$3.00 CSCL 08F

nut], Arachis hypogaea [peanut], Manihot esculenta [manioc]. Although some fields contain sorghums or millets only, most crops are planted in association, e.g., cowpea and okra with millet and maize; okra and hungry rice; or millets, maize, cowpea, cotton, Bambara nut, peanut, potatoes, manioc and okra in a complex association. In the imagery a 30 mile wide band paralleling the main course of the river, on its northern side, contains many indications of extensive cultivations and is distinct from adjacent areas. Planting is done at the beginning of the rains *usually July in this area): millets are ready for harvest between 65 and 140 days; the sorghums between 120-150 days. At the time of acquisition (11 October), some millets should have been harvested, the sorghums ripening. The cycle for regeneration of vegetation before new fields are prepared in a given spot is 20 years. The imagery is entirely consistent with the details of Bambara shifting cultivation, with some fields in active cultivation and others in varying states of regeneration.

c, Wheat is planted in ouaddis or river courses, dry most of the year. Sowing is done in November. The ouaddis courses are discernible.

d, Kitchen gardens are immediately adjacent to homesteads; these small sides are undetermined at this time.

Peul cattle camps proper are not discernible in imagery although several places suggestive of cattle trafficking^k have been noted. Pasturage is distinctively different from Bambara; identification of grass types/pasture types has not been attempted.

Maure camps are not discernible. A nearly straight lineament trending west to northwest coincides with the southern boundary of Maure occupancy.

Bozo live and work in the immediate environs of the river. River course and channeling are readily discernible in imagery.

A mixed population, composed of peoples of diverse origin, is probably characteristic of the paddy rice cultivations controlled by new irrigation channels. The indigenous population is Bambara who probably form a component in the population. At an enlargement to the scale of 1:140,000, patterning internal to the paddy rice area is readily discerned.

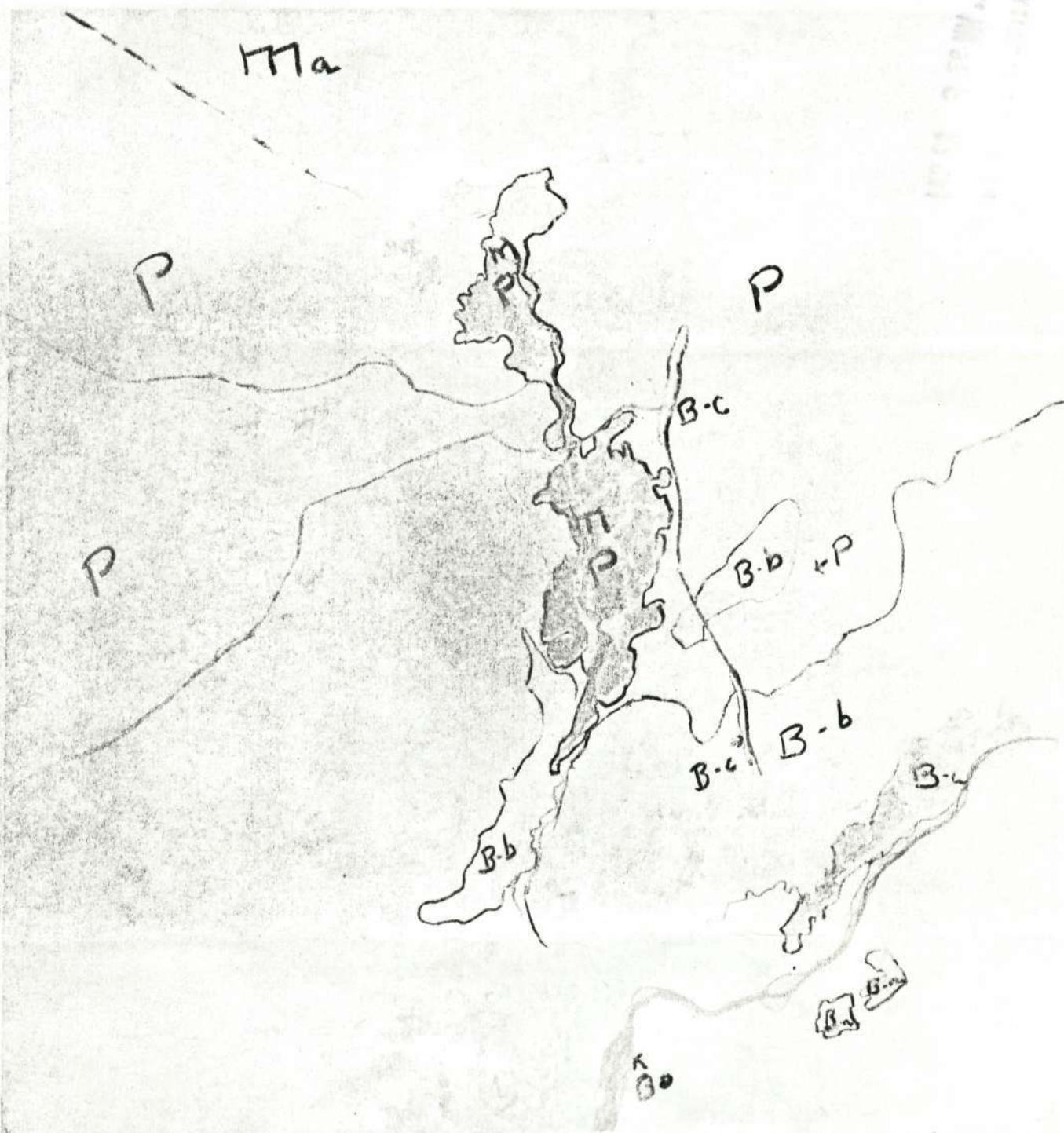
Only the external boundaries of each ethnic groups are defined on the ethnographic map. With the imagery internal differentiation is now possible, with the aid of the ethnography for information on crops, animals and customary practice.

II. The provisional limits of occupancies can be demarcated. An overlay of tentative boundaries has been prepared.

III. Subdivision administrative boundaries, not the same as ethnographic boundaries, are, in many cases, apparently coterminous with river channels or ouaddis (dry river courses).

Source: Paques, Viviana. 1954. Les Bambara. Monographies Ethnologiques Africaines, Institute International Africain de Londres. Presses Universitaires de France, Paris.

Reproduced from
best available copy.



11 OCT72 N14-26W006-09 N N14-25/W006-05 MSS 7. .1111 ERTS E 1080-10163-7

Catholic University of America - Research Institute for Social and Behavioral Sciences
ERTS Image Analysis

Symbols

Bambara = B

a fields bordering river channels

b, Extensive shifting or bush cultivations

c, ouaddis cultivated for wheat

Peul = P

Maura = Ma

Bozo = Bo

Mixed Population = MP

Administrative boundary